

# The Effect of Career Counseling Based on Krumboltz's Social Learning Theory (LTCC) on Improving Students' Entrepreneurial Self-Efficacy - A Study

Zahra Ghosvami<sup>1\*</sup> & Neelam. Ramnath kishan<sup>2</sup>

1. Research scholar in Department of Education, Kakatiya University, H. No:2-1-663/1, C/O Ashok Reddy. Palle, Saraswathi Nagar, Gopalapur Cross, Hanamkonda, Warangal, 506001. Andhra Pradesh-India
2. Professor of Education, Department of Education, Kakatiya University-Warangal-506009(AP) India

\*E-mail of the corresponding author: [ghosvami57@yahoo.com](mailto:ghosvami57@yahoo.com)

## Abstract

The purpose of this study was to determine the effect of career counseling based on krumboltz's social learning theory on university students' entrepreneurial self- efficacy. **Methods:** 60full-time graduate students were selected by stratified random sampling and participated in 8 session's career counseling based on LTCC. Data was collected via entrepreneurial self-efficacy questionnaire ( $\alpha = .81$ ). The correlated t-test and ANCOVA were used for analyze the data. **Findings:** participation in career counseling program improved the students' entrepreneurial self-efficacy. The findings also indicated career counseling based on LTCC had the same effect on male and female participants; but improved science students' entrepreneurial self-efficacy rather than engineering students. As well as, it improved urban students' entrepreneurial self-efficacy more than rural students. **Conclusion:** our findings indicate that educational experiences can be critically important to improve the students' entrepreneurial self-efficacy that can eventually lead to the development of entrepreneurship in the students.

**Keywords:** education/career counseling/krumboltz's social learning theory/entrepreneurial self-efficacy

## 1. Introduction

Radical change in human communications in the globalization has caused a novel wave of fundamental transition in all fields, making our lives depend on information technology more deeply than ever. One of these new fields is the issue of entrepreneurship which has attracted the attention of scientific and training associations in the world.

Gurol and Astan (2006) believe that the entrepreneurship is the motive engine of economic development and advance creating and reforming society. Entrepreneurship is something more than just organizing a new career (Shane, Locke and Collins ,2003) and the entrepreneur is a person who undertakes to organize, run and accept the risks of an economic activity (Kuratko and Hodgetts, 2004). Entrepreneurs undertake an important role in the movement of economic development of cycles and are considered as the source of the great evolution in the industrial, productive, and serving field on the ground of organization (Duane, 2000).

Concerning the importance of the role of entrepreneurs and their activities in a countries economy improvement, it is obliged not only to research this issue from various perspectives but also to search suitable methods for improving this innovation. So it is necessary to respond to two substantial questions leading to settle some controversies: 1-Which variable influence on entrepreneurship? In sum, factors that would influence one to become an entrepreneur are many, and consist of various combinations of personal attributes, traits, background, experience, and disposition (Arenius & Minniti, 2005; Baron, 2004; Krueger, Reilly & Carsrud, 2000; Shane et al., 2003). A principal characteristics that is known as a prerequisite for releasing entrepreneurial potential is self- efficacy.

Recently this concept has entered institutional and managerial field making it as a decent feature for studying about entrepreneurs (Chen, Greene, & Crick, 1998), with the known Entrepreneurial Self-Efficacy (ESE) that appears to be a particularly important antecedent to new venture intentions (Barbosa, Gerhardt, & Kickul, 2007; Zhao, Seibert, & Hills, 2005). ESE is particularly useful since it incorporates personality as well as environmental factors, and is thought to be a strong predictor of entrepreneurial intentions and ultimately action (Bird, 1988; Boyd & Vozikis, 1994). Entrepreneurial Self-Efficacy is in fact an entrepreneur's personal judgment enjoying a serious belief and thought about his ability for controlling behavior, skills, cognitive and

mental processes in order to take an efficient action in the environment. Entrepreneurial self-efficacy is a suitable feature for searching about entrepreneurs because it has an intimate relation with optional and voluntary action, so it can be applied for studying voluntary activities of entrepreneurs, the degree of their perseverance and their efficiencies.

2- Can entrepreneurship be trained in a society? So accordingly, Can we increase the number of entrepreneurs in a society? For answering this question, can be said research has shown that entrepreneurship education can improve the perceptions of nascent entrepreneurs toward the feasibility of their business ideas, as well as provide them with a more complete skill set (Gatewood, Shaver, Powers & Gartner, 2002). Particularly, in the entrepreneurial self-efficacy area, it can be improved through engaging students in experiential and social learning activities (Rae and Carswell, 2000). Wilson, Kickul & Marlino (2007) believe that purposeful education can enhance students' entrepreneurial self-efficacy through providing them knowledge and skills to cope with the complexities embedded in entrepreneurial tasks such as opportunity seeking, resource assembling, and leading the business to success. In fact, education enhances entrepreneurial self-efficacy of students through providing experience of mastery, role models, social persuasion and support by involving them in hands-on learning activities, business plan development, and running simulated or real small business (Fiet, 2000; Segal, Borgia & Schoenfeld, 2005). Furthermore, education plays a crucial role in developing students' entrepreneurial self-efficacy through involving them in various entrepreneurial activities and increasing their desirability to step into venture creation by highlighting the merits, values and advantages of entrepreneurship (Segal et al., 2005); as well as encouraging and supporting them to start-up their own business. Hence, improving student's entrepreneurial self-efficacy enables them to put more efforts over a longer time persist the challenges and develop plans and strategies to achieve higher entrepreneurial goals (Shane et al., 2003).

Unfortunately despite the importance of training entrepreneurial self-efficacy in fostering successful entrepreneurs, few studies have been commissioned for improving it in Iran. Therefore this study has been designed and conducted for this purpose. In this study researchers have been tried to examine the effect of the career counseling based on Krumboltz's social learning theory (LTCC) as a new theory on improving students' entrepreneurial self-efficacy.

In LTCC the process of career development involves four factors: 1. Genetic endowments and special abilities; 2. Environmental conditions and events; 3. Learning experiences; 4. Task approach skills; Krumboltz (1996) emphasize that each individual's unique learning experiences over the life span are most influential in the career choice process. Therefore, learning is a key ingredient in career counseling, suggesting that career counselors' major task is to enhance learning opportunities for clients by using a wide array of effective methods that begin in childhood and endure throughout a lifetime. The scope of the career counselor's role is viewed as very complex and inclusive suggesting a number of skills, knowledge, and teaching methods to deal with all career and personal problems that act as barriers to goal attainment. Career counselors may take the role of mentor, coach, or educator and the counselor as educator has to provide the environment for clients to develop interests, skills, values, work habits, and many other personal qualities. From this learning perspective, clients can be empowered to take actions that promote the creations of satisfying lives now and in the future. In this theory the effects and the role of cognitive and behavior factors have been emphasized by counselors. By application of Krumboltz's social learning theory for entrepreneurship, the connections between talents, prior experiences, environmental circumstances and qualifications needed for doing a job are digested more comprehensively (Zunker, 2006; Luthan et al. 2000).

In sum, by considering the significance of sensitive and influential effect of entrepreneurial self-efficacy in promoting the frequency of entrepreneurship and also key position of self-efficacy in social learning theory, this study strives to investigate the effect of career counseling based on Krumboltz's social learning on developing entrepreneurial self-efficacy among students of Isfahan University of Technology.

## 2. Review literature

Studies in different areas of the human and social sciences have contributed to enhancing the understanding of the phenomenon of entrepreneurship; as matter of fact interest and research in entrepreneurship have been rising over the past few years (Green, David, Dent, Tyshkovsky, 1996; Outcalt, 2000; Alstete, 2002; Rohaizat and Fauziah, 2002; and Frank, Korunka, Lueger, Mugler, 2005) because of its role in development of a country. But despite the growing interest in the subject, studies are still in the early stages of development, given the precariousness of universally accepted concepts and research methods (Brazeal & Herbert, 1999) especially in entrepreneurship education programs. As matter of fact despite the theoretical connections between entrepreneurial education and outcomes, extensive work that has attempted to examine the effectiveness of formal entrepreneurship education has been inconclusive (Cox, Mueller, & Moss, 2002). One reason may be that research on entrepreneurship education has been limited by the educational "preoccupations" of the

researchers, and that social-cognitive and psycho-cognitive perspectives have been underexplored (Bechard & Gregoire, 2005). It also may be that the lack of clear positive connections between entrepreneurship education and outcome is linked to methodological issues. Specifically, the outcome measures used in many studies, such as student satisfaction and performance in the course, may be insufficient indicators of educational effectiveness (Cox et al., 2002).

Entrepreneurial self-efficacy (ESE) is the degree to which people perceive themselves as having the ability to successfully perform the various roles and tasks of entrepreneurship (Chen et al, 1998; De Noble, Jung, and Ehrlich, 1999). Without minimal levels of entrepreneurial self-efficacy, it is unlikely that potential entrepreneurs would be sufficiently motivated to engage in the new venture creation process (Boyd and Vozikis, 1994; Krueger and Brazeal, 1994; Markman, Balkin, and Baron, 2002; Zhao et al, 2005).

Although, there is few empirical evidence on the influence of entrepreneurship education and training on entrepreneurial self- efficacy (Chen et al , 1998), and a small number of studies have examined the effectiveness of entrepreneurship programs in enhancing self-efficacy (Chowdhury & Endres, 2005; Cox et al., 2002),and these studies have been limited in scope and inconclusive in their findings, but these small studies have been able to show the importance and effect of education on entrepreneurial self- efficacy; for example Chen et al. (1998) introduced entrepreneurial self-efficacy (ESE) as the criteria to distinguish entrepreneurs from those who do not intend to create their own business. Choosing entrepreneurship, management, and organizational psychology students as the participants of the study, they conclude that entrepreneurship education was effective in developing entrepreneurial self-efficacy and consequently intention of students to set up their own business.

On the impacts of education in entrepreneurial capability development of students, Rae and Carswell (2000) proposed a model at the heart of which is self-efficacy. They believed that entrepreneurial self-efficacy can be improved through engaging students in experiential and social learning activities. They looked at the process of learning entrepreneurial behavior through a lens of life-story process and argued that entrepreneurs' self-confidence and self-belief is highly affected by active learning, relations, known capabilities, and personal theory. They act as motivational engine of entrepreneurial capabilities. Importantly, self-efficacy increases over time and through involving in experiential learning activities.

Erikson (2003) showed the entrepreneurial self-efficacy can be developed through involving students in three major learning opportunities including mastery experience, vicarious experience and social experience. Zhao et al. (2005) also stressed the mediating role of entrepreneurial self-efficacy on the relationship between entrepreneurship courses and university students' entrepreneurial behavior. They argued that entrepreneurship education should not only focus on technical aspects of entrepreneurship, but it also should strengthen students' self-confidence to become entrepreneurs through offering them variety of learning opportunities.

Hollenbeck & Hall (2004) believe that unlike other personality traits of entrepreneurship which are relatively static, self-efficacy is affected by context factors such as education and past experiences. In another study, Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business. In addition, those who perceived their entrepreneurship education to be a positive experience showed higher scores of perceived feasibility than those who thought their educational experience was negative.

A recent but limited study examining the role of education on entrepreneurial self-efficacy has suggested a gender interaction, with education playing a more significant role for females than for males (Chowdhury & Endres, 2005).Cox et al. (2002) noted the typical teaching methods in most entrepreneurship educational programs, which include the use of guest speakers and case studies, can also target self-efficacy through the use of role models. These help individuals form judgments of their own capabilities through personal comparison.

Dyer (1994) and Kourilsky (1995) believed that self-efficacy can also be enhanced through social persuasion, or from the positive encouragement and feedback that individuals are given by professors and instructors in entrepreneurship education programs. Importantly, consistent with research on the early formation of career interests, additional studies indicate that entrepreneurship education at universities may be particularly effective in increasing interest in entrepreneurial careers.

### **3. Research Hypotheses**

As the importance of educational programs for increasing the entrepreneurial self-efficacy, in present study, researchers have been tried to determine the effect of career counseling based on krumboltz's social learning theory on improving the university students' entrepreneurial self-efficacy. In addition has been tried to find out the effect of that program on entrepreneurial self-efficacy of male and female, engineering and science, rural and urban students. As such, we hypothesize:

**Hypothesis 1:** the career counseling based on krumboltz's social learning theory improves entrepreneurial self-efficacy of students.

**Hypothesis 2:** There is a significant difference between male and female students in entrepreneurial self-efficacy.

**Hypothesis 3:** There is significant difference between engineering and science students in entrepreneurial self-efficacy.

**Hypothesis 4:** There is significant difference between rural and urban students in entrepreneurial self-efficacy.

#### 4. Method

##### 4.1. Sample

The 60 (male =30, female = 30) full-time undergraduate students of Isfahan University of Technology with an average age of 21.5 years, participated in the study that who were selected from the registered list in the university education office based on the stratified random sampling method. Table 1 shows the result of sampling in details.

##### 4.2. Tool

The Entrepreneurial Self-Efficacy questionnaire was applied in this study. This questionnaire has been designed by researchers based on conceptual definitions of entrepreneurial self-efficacy and relevant areas borrowed from Chen et.al study (1998). It comprises of 29 questions, The ESE questionnaire is a Likert format 29-item scale and any question receivers 1 to 5 score; actually the response format is a 5-point scale (1 = strongly disagree, 5 = strongly agree) and its maximum score is 145 and the minimum is 29; (example of items includes: "I can work under stress, pressure, and conflict", "I can make the necessary decisions under the ambiguous situations", "I am able to create new ways to generate") .Its content validity has been confirmed by four experts in counseling, industrial and organizational psychology. Cronbach's  $\alpha$  was about .81. For estimating reliability; test-retest reliability with the interval of three weeks has been applied for the population of 50 university students being selected randomly. Correlation coefficient was calculated as 62% which is significant ( $P=0.003$ ).

##### 4.3. Statistical Methods

In this study Statistical methods consist of: **1.** Descriptive statistics by applying mean, standard deviation, and so on. **2.** Inferential statistics by applying analysis of covariance (ANCOVA) and correlated t-test. For this purpose SPSS software (version 17) has been performed to analyze the data.

##### 4.4. Procedure

60 full-time graduate students were selected from university registration list based on the stratified random sampling and the total of sixty students was involved in the study. After that students spent eight sessions course during the four weeks (duration of every session was 180 minutes). They thought about entrepreneurship and related issues according the career counseling base on krumboltz's social learning theory. General subjects of the issues are as following: Session 1: getting acquainted with experimental team member and administering pretest of entrepreneurial self-efficacy questioner; Session 2: clarifying the concepts of entrepreneurship and its relevant suppositions and stimulating the sense of qualification; Session 3: debate about skills for performing an activity; Session 4: debate about genetic and environment features; Session 5: introducing entrepreneurship creativity through mental scheduling for achieving success; Session 6: introducing entrepreneurial self-esteem and searching about the effect of modeling; Session 7: debate about internal control centers and concerning emotional feelings. Session 8: introducing entrepreneurship improvement motives, techniques, positive incarnation, feedback, and administering posttest. Participants completed the entrepreneurial self-efficacy questioner in the first and last sessions as pre and posttest.

#### 5. Results

As the importance of educational programs for increasing the entrepreneurial self-efficacy, we have been tried to determine the effect of career counseling based on krumboltz's social learning theory on improving the university students' entrepreneurial self-efficacy as a new way. In addition has been tried to find out the difference effect of program on male and female, engineering and science, and the rural and urban participations' entrepreneurial self-efficacy. In this regard, in present study the main hypothesis was the career counseling based on krumboltz's social learning theory improves entrepreneurial self-efficacy of students. The correlated t-test was used for comparing the pre and post entrepreneurial self-efficacy test's results.

According to table 2 the mean of pre entrepreneurial self-efficacy test is 87.91 and standard deviation is 21.32 while the mean of post entrepreneurial self-efficacy test is 116.48 and standard deviation is 16.86; and table 4

shows,  $t=14.06$ ;  $DF=59$ ;  $p=000$  that indicates significance differences in pre and post test; therefore the research hypothesis is supported.

In addition, in this study, three sub-hypotheses related to entrepreneurial self-efficacy (gender, subject, and location of participants) were examined and the results analyzed by one way analysis of covariance (ANCOVA). Result shows that the mean of male in post test is 114.2 and standard deviation is 20.0 while the mean of post entrepreneurial self-efficacy for female is 118.7 and standard deviation is 13.14; and  $F(1, 56) = 1.99$ ;  $P = .164$ ;  $\eta^2 = .034$ , that indicates there is no significance differences between male and female students in entrepreneurial self-efficacy; Therefore, the research hypothesis is rejected. In the other word, in this study the effect of gender in relation to the efficacy of LTCC on entrepreneurial self-efficacy was not significant. (See table3)

Also result shows that the mean score of engineering students is 110.87 and standard deviation is 20.05 while the mean of science students is 122.1 and standard deviation is 10.53 in post test and  $F(1, 56) = 14.84$ ;  $P = .000$ ;  $\eta^2 = .021$  that indicates there is significance differences between engineering and science students in entrepreneurial self-efficacy; Therefore, the research hypothesis is approved. (See table4)

In addition, according to table5 the mean of urban students in post entrepreneurial self-efficacy test is 119.0 and standard deviation is 16.23 while the mean of post entrepreneurial self-efficacy test for rural students is 114.0 and standard deviation is 17.38; and  $F(1, 56) = 3.83$ ;  $P = .000$ ;  $\eta^2 = .064$  that indicates there is significance differences between rural and urban students in entrepreneurial self-efficacy; Therefore, the research hypothesis is approved.

## 6. Discussion

Nowadays entrepreneurship education is fundamental and also demanded by large organizations in order to acquire the flexibility and responsive dexterity of small business and individual entrepreneurs. It is also needed to enable creative solutions in the public sectors such as education (Binks, Starley & Mahon, 2006). Therefore the primary interest of this study was to examine the effect of career counseling based on Krumboltz's social learning theory (LTCC) on entrepreneurial self-efficacy among the university students while also considering the influence of gender, subject and location differences in entrepreneurial self-efficacy.

Our findings showed the mean of female participants in the post entrepreneurial self-efficacy was higher than male participants but there was no significant difference between them; therefore we can conclude that the career counseling program based on LTCC had the same effect on male and female participants. In addition, because the science students' score in the post entrepreneurial self-efficacy test was higher than engineering students and there was significant difference between them, we can conclude LTCC has been able to improve science students' entrepreneurial self-efficacy more than engineering students. Also, because the mean of urban students in the post entrepreneurial self-efficacy test was higher than rural students and there was significant difference between them, therefore we can conclude LTCC has been able to improve urban students' entrepreneurial self-efficacy more than rural students. A total compare the students' results in pre and posttest showed that our entrepreneurial education program improved urban students' entrepreneurial self-efficacy.

In sum, completion of course was found a strong affect on the participants' entrepreneurial self-efficacy and our findings indicate that educational experiences can be critically important to improve the students' entrepreneurial self-efficacy that can eventually lead to the development of entrepreneurship in the students. As matter of fact, this finding is important in that if students understand the necessity and need of having entrepreneurship education, their intention to become an entrepreneur increases. This necessitates developing effective entrepreneurship education to explain them the necessities and benefits of self-employment. This finding is inconsistent with the current role of universities in development of entrepreneurship.

The findings showed that the need to learn entrepreneurship through education is essential to ensure university students have the ability to possess all the pertinent ingredients to equip themselves with entrepreneurial self-efficacy. This finding concurs with Lussiers and Pfeifer's (2001) findings, where entrepreneur with higher education level, industrial and managerial experience, and business exposure have greater chance of succeeding in their business. The basic skill necessary to meet this challenge is the ability to recognize a market needs and the ability to develop a product or service appropriate to satisfy these needs. In this sense, entrepreneurial self-efficacy is the strong personal belief in skills and abilities to start-up a business and leading it to success. Accordingly, those who are higher on entrepreneurial efficacy are more interested to be engaged in entrepreneurial activities and feel confident in facing the challenges and removing the obstacles in the process of venture creation (Chen et al, 1998) and lead the venture to success and growth.

In addition, findings from this study confirm results from previous studies for example as suggested by Kuratko (2005), certain facets of entrepreneurship can be taught and an "*entrepreneurial perspective*" can be developed



in individuals (p. 578). Similarly, Florin, Karri, & Rossiter (2007) believe that a primary focus of entrepreneurship teaching and learning is the development of positive attitudes. Additionally, research indicates that educational programs with hands-on entrepreneurial activities and proper faculty guidance can help to enhance students' self-efficacy (Florin et al., 2007) and entrepreneurial intentions (Souitaris, Zerbini, Al-Laham, 2007). Dyer (1994) and Kourilsky (1995) indicated that entrepreneurship education at universities can be particularly effective in increasing interest in entrepreneurial careers. In one study, Peterman and Kennedy (2003) found that participation in an entrepreneurship program significantly increased perceived feasibility of starting a business. Also Rae and Carswell (2000) believe that entrepreneurial self-efficacy can be improved through engaging students in experiential and social learning activities. Moreover, Erikson (2003) indicated that entrepreneurial self-efficacy can be developed through involving students in three major learning opportunities including mastery experience, vicarious experience and social experience.

## **7. Conclusions and Implication**

The fields of entrepreneurship are dynamic and changing. Current research on entrepreneurship may extend previous understandings and provide insights into the impact of entrepreneurship training and particular forms of information and knowledge resources and their combinations within the internal and external networks of the new enterprise. Unfortunately despite the importance of entrepreneurship training, few studies have been commissioned for improving it in the world and especially in Iran. Therefore in this study researcher has been tried to examine the effect of Krumboltz's social learning theory (LTCC) as a new theory on improving entrepreneurial self-efficacy among the university students.

This study substantially helps us to understanding the entrepreneurship, some of the related issues, and the effect of LTCC on the university students to become an entrepreneur. It also helps to understand the importance of entrepreneurship courses for graduate students as a basis to choose entrepreneurship as a career choice. In addition, this study shows clearly the universities should add more value to their graduates if they incorporate into their curriculum elements that enhance the development of entrepreneurial self-efficacy, since it is beneficial to both a self employment and employment career path.

The result of the study not only can develop the entrepreneurial literature but also can be applied practically by head masters (headmasters) those involved in establishing companies and businesses in job and social affairs ministry, occupation offices and technological professional colleges. Moreover, the chiefs and managers can apply the implications for training entrepreneurial teams in sciences, technologies and research ministry, education ministry and other private sections involved in business such as job-seeking centers and career counseling.

## **8. Limitations of the study**

There were a number of limitations associated with this study, some of these limitations, however, offer avenues for future research. Some of which originate from constraints on time and money, others from the limited availability literature about the study because it is one of the first efforts to explicitly the effect of LTCC to raise the level of student's ESE.

Our sample size may limit the extent to which our results can be generalized. With a larger sample, we would have been able to better evaluate potential differences in our results based on students' gender, subject and locality. In addition the mean of students' age was 21.5 years therefore it is not surprising that only 7.8% had previous experience of self-employment; also, the questionnaire was administered among students only in one university in the central region of Iran.

## **9. Suggestions for further research**

1. Entrepreneurship education should not only focus on technical aspects of entrepreneurship, but it also should strengthen students' self-confidence to become entrepreneurs through offering them variety of learning opportunities.

2. Future research should examine whether our findings generalize to other samples and settings. In addition, it is important to test the validity and usefulness of ESE within a more elaborate homological network.

3. Use of other research design methods specially semi experimental methods with control group and pre and post measurement of entrepreneurship training programs and courses to provide educators with better information about continuous improvement and program effectiveness.

4. As a well-designed entrepreneurship education program can give the student a realistic sense of what it takes to start a business as well as raising the student's ESE, future studies should seek to find another dimensions of ESE and the best programs for training it to students.

5. Because ESE is important to successful venturing in certain cultural contexts, future research should explore moderating conditions for ESE such as (1) stage of venture development, (2) growth goals of entrepreneurs, and (3) cultural influences on ESE. For example cross-cultural studies of ESE can identify particular cultural factors that influence the development of ESE.

6. It is important that future research examine the relationship between ESE with other constructs, such as locus of control. Also, researchers should examine whether the functional relationships of ESE and other related constructs are different.

## REFERENCES

- Alstete, J.W. (2002). On becoming an entrepreneur: an evolving typology, *International Journal of Entrepreneurial Behavior & Research*, 8(4), 222-34.
- Arenius, P. & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small Business Economics*, 24(3), 233-247.
- Barbosa, S., Gerhardt, M., & Kickul, J. (2007). The role of cognitive style and risk preference on entrepreneurial self-efficacy and entrepreneurial intentions. *Journal of Leadership & Organizational Studies*, 13(4), 86-104.
- Baron, R.A. (2004). The cognitive perspective: A valuable tool for answering entrepreneurship's basic "why" questions. *Journal of Business Venturing*, 19(2), 221-239.
- Bechard, J-P., & D. Gregoire (2005). Entrepreneurship Education Research Revisited: The Case of Higher Education. *Academy of Management Learning & Education*, 4(1), 22-43.
- Binks, M, Starley, K, & Mahon, C.L. (2006). Entrepreneurship education and the business school. *Technology analysis and strategic management*. 18(1):1-18.
- Bird, B. (1988). Implementing entrepreneurial ideas: The case for intention. *Academy of Management Review*, 13(3), 442-453.
- Boyd, N. & Vozikis, G. (1994). The influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4), 63-77.
- Brazeal, D. & Herbert, T. (1999). The Genesis of Entrepreneurship. *Entrepreneurship: Theory & Practice*. 29-34.
- Carter, N.M., Gartner, W.B., Shaver, K.G., & Gatewood, E.J. (2003). The career reasons of nascent entrepreneurs. *Journal of Business Venturing*, 18(1), 13-39.
- Chen, G., Gully, M.S., & Eden, D. (2004). General self-efficacy and self-esteem: Toward theoretical and empirical distinction between correlated self-evaluations. *Journal of Organizational Behavior*, 25, 375-395.
- Chen, G.C., Greene, P.G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers. *Journal of Business Venturing*, 13, 295-317.
- Chowdhury, S. & Endres, M. (2005). Gender difference and the formation of entrepreneurial self-efficacy. *Presented at the United States Association of Small Business (USASBE) Annual Conference*, Indian Wells, CA.
- Cox, L., Mueller, S., & Moss, S. (2002). The impact of entrepreneurship education on entrepreneurial self-efficacy. *International Journal of Entrepreneurship Education*, 1, 2.
- Duane, G. A. (2000). *Management and organization*. Ohio: South-western.
- Dyer, W.G., Jr. (1994). Towards a theory of entrepreneurial careers. *Entrepreneurship Theory and Practice*, 19(2), 7-21.
- Erikson, Truls. (2003). "Towards taxonomy of entrepreneurial learning experiences among potential entrepreneurs", *Journal of Small Business and Enterprise Development*, Vol. 10 Is: 1, pp.106 – 112.
- Fiet, J. (2000). The pedagogical side of entrepreneurship theory. *Journal of Business Venturing*, 16, 101-117.
- Florian, J. Karri, R. & Rossiter N. (2007). Fostering entrepreneurial drive in business education: An attitudinal approach. *Journal of Management Education*, 31: 17 – 42.
- Frank, H., Korunka, C., Lueger, M., Mugler, J. (2005). Entrepreneurial orientation and education in Austrian secondary schools, *Journal of Small Business and Enterprise Development*, 12(2), 259-273.
- Gatewood, E. J., Shaver, K. G., Powers, J. B. and Gartner, W. B. (2002). Entrepreneurial expectancy, task effort, and performance. *Entrepreneurship Theory & Practice*, 27 (2), 187-206.

- Green, J. David, M. Dent, A. Tyshkovsky, (1996). "The Russian entrepreneur: a study of psychological characteristics", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 2 Iss: 1, pp.49 – 58.
- Gürol, Y., & Atsan, N. (2006). Entrepreneurial characteristics among university Students and training in Turkey. *Education and Training*, 48(1), 25–38.
- Hollenbeck, G. & Hall, D.T. (2004). Self-confidence and leader performance. *Organizational Dynamics*, 33(3), 254-269.
- Kourilsky, M. (1995). Entrepreneurship Education: Opportunity in Search. Of Curriculum. *Business Education Forum*, 50(10), 11-15.
- Krueger, N.F., Jr. & Brazeal, D.V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory & Practice*, 18(3), 91-104.
- Krueger, N.F., Reilly, M.D., & Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411-432.
- Krumboltz, J.D. (1996). *A learning theory of career counseling*. In M. L. Savickas & W. B. Walsh (Eds.), *Handbook of career counseling theory and practice* (pp. 55–81). Palo Alto, CA: Davies-Black.
- Kuratko, D. (2005). The emergence of entrepreneurship education: Developments, trends, and challenges. *Entrepreneurship Theory & Practice*, 29 (5), 577-597.
- Kuratko, D.F. & Hodgetts, R.M. (2004). *Entrepreneurship: Theory, Process, Practice* (Mason,OH; South-Western Publishers).
- Lussier, R.N., & Pfeifer, S. (2001). A crossnational prediction model for business success, *Journal of Small Business Management* 39(3), 228-239.
- Luthan, F. Jckovicsta, A & Ibrayera, E. (2000). Enviornmental and psychological challeges facing entrepreneurial development in transitional economies. *Journal of Word Business*, 35(10), 95-110.
- Markham, G. D., Balkin, D.B & Baron, E.A (2002). Inventors and New Venture Formation: the Effects of General Self-Efficacy and Regretful Thinking. *Entrepreneurship Theory and Practice Journal*. Volume pages 149–165.
- Outcalt, C. (2000). *The Notion of Entrepreneurship: Historical and Emerging Issues*”, *Kaufman Center for Entrepreneurial Leadership Clearinghouse on Entrepreneurship Education*. Kansas City, United States of America.
- Pajares,F.(2002) *Overview of social cognitive Theory and self-efficacy*. from <http://www.emory.edu/education/mfp/eff.html>.ship to Entrepreneurial action. Babson college. File://A:entrepreneur.Htm.
- Peterman, N. E. & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship: Theory and Practice*, 28, 129-144.
- Rae, D. & Carswell, M. (2000). Using a life-story approach in researching entrepreneurial learning: The development of a conceptual model and it simplifications in the design of learning experiences. *Education & Training*, 42(4/5), 220-228.
- Reynolds, P.D., Carter, N. M., Gartner, W.B., & Greene, P.G. (2004). The prevalence of nascent entrepreneurs in the United States: Evidence from the panel study of entrepreneurial dynamics. *Small Business Economics*, 23, 263–284.
- Rohaizat, B. & Fauziah, S.A. (2002). “Access to Human Capital in Entrepreneurship Education: A Comparison of Male and Female Students in Technical Disciplines”, *Akauntan Nasional*, September, pp. 30-33.
- Rotefoss, B. & Kolvereid, L. (2005). *Aspiring, nascent and fledgling entrepreneurs: An investigation of the business start-up process*. *Entrepreneurship & Regional Development*, 17, 109-127.
- Segal, G., Borgia, D., & Schoenfeld, J. (2005).The motivation to become an entrepreneur. *International Journal of Entrepreneurial Behaviour & Research*, 11 (1), 42-57.
- Shane,S., Locke, E.A., & Collins, C.J. (2003). Entrepreneurial Motivation. *Human Resource Management Review*, 13(2), 257-279.



Souitaris, V., Zerbini, S., Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4): 566-591.

Wilson, F., Kickul, J. & Marlino, D. (2007). Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship Education. *Article first published online*: 24 APR 2007.

Zhao, H., Seibert, C., & Hills, C. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, 90(2), 1265-1272.

Zunker, V. G. (2006). *Career counseling: a holistic approach*, 7th ed. Pacific Grove, CA: Brooks/Cole.

Table 1: The Method of Sampling

Gender	Subject	Location	N	Total
Male	Engineering	Urban	7	15
		Rural	8	
	Science	Urban	7	15
		Rural	8	
Female	Engineering	Urban	8	15
		Rural	7	
	Science	Urban	8	15
		Rural	7	
Total	60	60	60	60

TABLE2: The correlated t-test of pre and post entrepreneurial self-efficacy test

Stage	Paired Differences			t	df	Sig.
	MEAN	SD	MD			
Pre-ESE	87.91	21.32	28.57	14.06	59	.000
Post-ESE	116.48	16.86				

TABLE 3: Gender ANCOVA of entrepreneurial self-efficacy

Gender	Mean	SD	MD	df	F	Sig.	Eta
Male	114.2	20.0	4.49	56	1.99	.164	.034
Female	118.7	13.14					

TABLE 4: Subject ANCOVA of entrepreneurial self-efficacy

Subject	Mean	SD	MD	df	F	Sig.	Eta
Engineering	110.87	20.05	10.63	56	14.84	.000	.021
Science	122.1	10.53					

TABLE5: Location ANCOVA of entrepreneurial self-efficacy

Location	Mean	SD	MD	df	F	Sig.	Eta
Urban	119.0	16.23	6.132	56	3.83	.05	.064
Rural	114.0	17.38					